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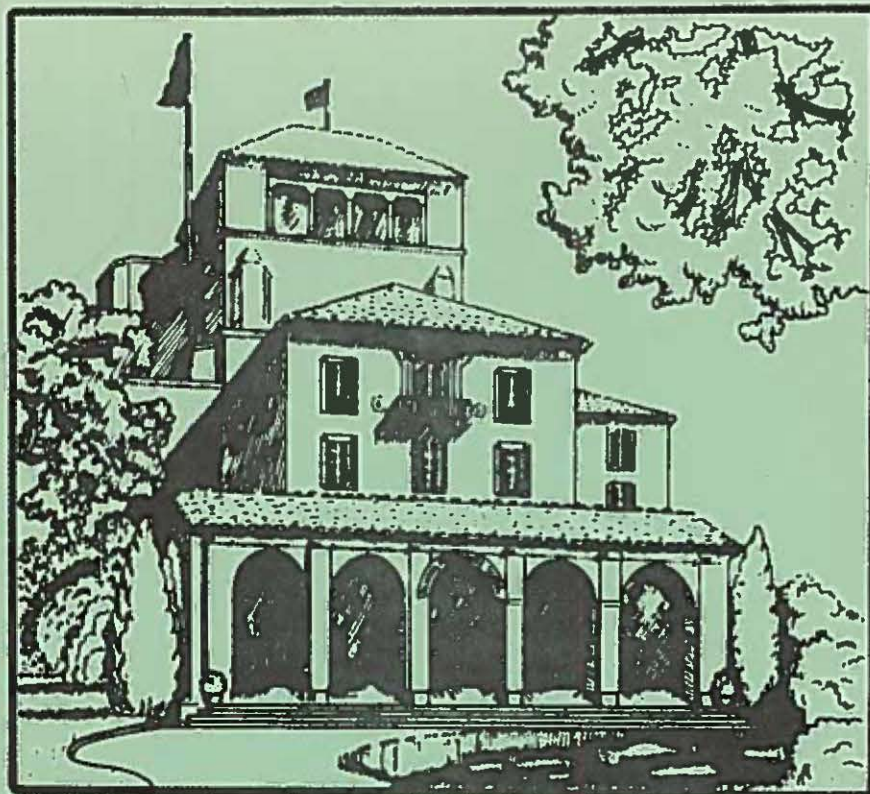
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Naval Postgraduate School FACULTY BULLETIN

25 November 1968

INGERSOLL HALL TO BE FULLY OCCUPIED

Additional funds have been made available unexpectedly to the School which will enable us to completely occupy Ingersoll Hall. This move will probably be started when the computer move into Ingersoll Hall has been completed (the end of December), and will cover a period of two or three weeks. An NPGS Notice will be published soon covering the details of the moves.

NEW NPGS FACULTY

Commander William A. KEARNS, Jr., U. S. Navy, joined the faculty of the Navy Management Systems Center in October 1968. Commander Kearns received a Bachelor of Science degree in Marine Transportation from the State University of New York Maritime College at Fort Schuyler. He also holds a Bachelor of Science Degree in Management from the Naval Postgraduate School. Commander Kearns has served extensively at sea in Destroyer, Amphibious, and Service type ships. Prior to joining the faculty Commander Kearns was Executive Officer of the USS SEMINOLE.

Lawrence E. Bell, Jr., Visiting Instructor of Aeronautics

Mr. Bell joined the faculty of the Department of Aeronautics in September 1968. He will be conducting research in the area of turbomachinery, while studying for his Ph. D. degree. He attended the Missouri School of Mines and Metallurgy at Rolla, Missouri, and received his Bachelor of Science Degree with major in Mechanical Engineering in 1963. Graduate study followed at Oklahoma State University where he received his Master of Science degree in 1964. His research was in the area of aircraft shear panel deformations.

FACULTY PUBLICATIONS

Barr, Donald.

Finite Statistics. Allyn and Bacon, Inc., Boston. 1969. 208 p.

Abstract: This text gives a mathematical treatment of the fundamental notions of statistics at a modest mathematical level. This is accomplished through considering only finite sample spaces throughout. The first two chapters provide the necessary mathematical notions of finite probability, together with the philosophical aspects of probability models. The remaining chapters concern the development of major statistical tools, such as estimation and testing.

Cantin, Gilles.

Strain displacement relationships for cylindrical shells. AIAA Journal, Vol. 6, No. 9, p. 1787-1788. September 1968.

Abstract: Four classical cylindrical shell theories are compared to determine their adequacy for the construction of stiffness matrices to be used in the finite element method. It is shown that the strain displacement relationships of these four theories do not all lead to strain free modes for and only for rigid body motions.

Folsom, Roger Nils.

The Effect of Capital Gains Taxes upon Securities Markets, Gains Realizations, and Tax Revenues -- A Comment upon one of Harley H. Hinrichs' Empirical Studies. National Tax Journal, XXI (June, 1968), pp. 205-209.

Abstract: In a 1963 article Hinrichs presented an intriguing analysis of federal income tax return data showing that investors' timing of their security market transactions appears to be sensitive to the differential between short and long term capital gains tax rates. Unfortunately, his presentation incorrectly suggested that his data showed the total volume over time (as well as the timing) of gains realizations to be sensitive to the overall level of tax rates on gains. The purpose of this note is to prevent this misinterpretation, by clarifying and explaining precisely what Hinrichs' data do and do not show.

Murphy, Peter W.

Relative strengths of resonance lines in the Ne I and Ar I isoelectronic sequences. Astrophysical Journal, Vol. 153, No. 1, p. 301-305. July 1968.

Abstract: Ratios of line strengths for the lowest transitions of the form $np^6\ ^1S_0 - np^5n's\ ^1P_1$ and $np^6\ ^1S_0 - np^5n's\ ^3P_1$ were calculated, using intermediate coupling theory, for the sequences named, to Iron XVII and Iron IX respectively. Agreement with "ab initio" calculations for the NeI sequence was good. Transition probabilities for these lines in Iron were calculated.

Sarpkaya, T.

The vortex valve and the angular rate sensor. Fluidics Quarterly, Nov. 1, No. 3, p. 1-10. 1968.

Abstract: The paper presents a critical discussion of the design and performance characteristics of two vortex devices -- the vortex valve and the angular rate sensor. The similar and dissimilar features of the devices, new theoretical and semi-empirical formulations for predicting the characteristics of these devices, and suitable comparisons of the theoretical results are presented.

Sarpkaya, T.

The performance characteristics of geometrically similar bistable amplifiers. ASME Paper No. 68-WA/FE-18, 1968.

Abstract: The results of a comprehensive study of the comparative performance characteristics of geometrically similar vented and unvented bistable amplifiers are presented for Reynolds numbers ranging from 9,750 to 60,000 and Mach numbers from 0.07 to 0.42.

Sinclair, James E.; Sewell, Robert and Cosner, Lawrence.

Accelerating detonations in composition B-3 explosive. 154th National Meeting American Chemical Society, Division of Fuel Chemistry, Vol 11, No. 4, p. 158-161. 10-15 September 1967.

Abstract: A model describing the limiting radius of curvature of the shock front for composition B-3 for stable detonation is proposed and correlated with experimental data.

Zehna, Peter W.

Finite Probability. Allyn and Bacon, Inc., Boston. 1969. 160 p.

Abstract: This introductory survey of finite probability incorporates the spirit and notation of modern mathematics. The emphasis is on contemporary mathematics. The emphasis of the development is on selecting mathematical models for random phenomena.

PRINCIPAL PROFESSIONAL ACTIVITIES

Assistant Professor Jerry D. Mahlman of the Department of Meteorology presented a paper entitled "Mean Meridional Circulations and Energy Transfers during a Minor Breakdown of the Polar Night Vortex" at the American Meteorological Society Conference on Composition and Dynamics of the Upper Atmosphere held at El Paso, Texas, November 5-8. At a companion planning meeting for AEC contractors held November 4, Professor Mahlman presented two papers entitled "Current Research on Three-dimensional Diagnosis of Atmospheric Motion Systems," and "Diagnostic Techniques for Investigation of Mesoscale Systems."

A review by Dean R. F. Rinehart of "Vector spaces of finite dimension," by G. C. Shepard, has been published in Mathematical Reviews, Vol. 36, No. 5, p. 1004, November 1968.

The following members of the Department of Physics presented papers at the annual meeting of the Acoustical Society of America held in Cleveland, Ohio, November 19-22:

Associate Professor James V. Sanders: "Sound Radiated by Spheres Falling in Dilute Aqueous Solutions of Poly(ethylene Oxide)."

Assistant Professor Alan B. Coppens: "Limits of Validity of a Perturbation Solution for a Finite Amplitude Standing Wave Confined to a Dust."

Professor T. Sarpkaya, Chairman of the Department of Mechanical Engineering, presented a paper at the International Federation of Automatic Controls Conference of the Royal Aeronautical Institute in London, England, 4-9 November 1968, titled "A Theoretical and Experimental Investigation of the Switching Mechanism in a Wall Attachment Fluid Amplifier."

Associate Professor Fred Schwirzke of the Department of Physics presented a paper entitled "Observations of Collisionless Shock Phenomena in a Laser Created Plasma" at the Division of Plasma Physics Conference, American Physical Society, held in Miami, Florida, November 13-16.

DISTINGUISHED VISITORS

Dr. Algo D. Henderson, Research Educator at the Center for Research and Development in Higher Education, University of California at Berkeley, visited the Postgraduate School on 20 November. The purpose of his visit was to discuss education for the professions.

The Navy Management Systems Center will present a one-week course in Defense Management Systems for Flag/General Officers starting 8 December. About 50 military and civilian participants are expected to attend, including officials from foreign countries. The Honorable Thomas H. Nielsen, Assistant Secretary of the Air Force (Financial Management), will address the group on Friday, 13 December.

NOTICES

LCDR Nadene B. LaBonté has relieved LCDR Maxine A. Mandt as Editor of the Faculty Bulletin. LCDR Mandt departs for duty in Stuttgart, Germany, on 26 November.

* * *

Mr. Quinones, manager of Vapor Cleaners, 951 Del Monte Avenue, has agreed to extend to Naval Postgraduate School faculty members the Navy Exchange laundry and dry-cleaning prices. He will extend these prices to all laundry and dry-cleaning brought into his establishment by the faculty and will post a sign in his establishment to this effect. A Faculty Member taking advantage of this offer must show identification indicating that he is a member of the Faculty. This offer does not include pick-up and delivery service.

CALENDAR OF PROFESSIONAL TRIPS

Supported by BuPers Funds:

A. E. Fuhs	12/2-12/5	Williamsburg, Va.	Attend AIAA Reentry Technology Conf. & Mtg of Entry Vehicle Tech. Committee.
W. Jennings	12/9-12/11	San Francisco	Att. Nat'l Mtg. of the Assn for Computing Machinery.
W. F. Koehler R. F. Rinehart	12/8 - 12/6	San Francisco	Attend Mtg of Council of Graduate Schools in the U. S.
R. H. Nunn	12/4-12/6	Santa Monica	Attend Mtg of McDonnell-Douglas Tech. Review Committee.
P. E. Cooper	12/2-12/5	Cape Canaveral	Att. AF Systems Command/ Industry Value Engr Conf.
S. R. Parker	12/3-12/6	Miami Beach	Att. 1968 IEEE Int'l Symposium on Circuit Theory.
J. C. Nielsen L. C. Wible	11/24-11/27	Santa Ana	Industrial Tour.

Supported by other than BuPers Funds:

J. A. Miller	12/1-12/5	New York City	Att Mtg of ASME and Nat'l Fluid Mech Com.
P. F. Pucci T. Sarpkaya	12/1-12/5	New York City	Att 89th ann mtg of ASME
U. Haupt	11/25-11/27	Seattle	Discuss problems of Interface between materials & structures at Boeing Company
C. E. Menneken	12/4-12/13	Washington, D. C.	Att. mtgs of the Mine Advisory Comm, Study Groups and to visit Navv Commands.